



712CD 75TH MORSS CD Cover Page

Name of Principal Author and all other author(s): Michael H. Oelrich

Principal Author's Organization and address: Jacobs Technology, Inc.
308 W. D Street
P.O. Box 1935
Eglin AFB, FL. 32542

Phone: (850) 882-0526

Fax: (850) 882-9291

Email: michael.oelrich@eglin.af.mil

Original title on 712 A/B: Combined Test Operations: Expanding Efficiencies and Effectiveness

If the title was revised please list the original title above and the revised title here:

PRESENTED IN:

WORKING GROUP: 25

DEMONSTRATION:

COMPOSITE GROUP:

POSTER:

SPECIAL SESSION 1:

TUTORIAL:

SPECIAL SESSION 2:

OTHER:

SPECIAL SESSION 3:

This presentation is believed to be: *Unclassified, approved for public release, distribution unlimited, and is exempt from U.S. export licensing and other export approvals including the International Traffic in Arms Regulations (22CFR120 et seq.)*

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 01 JUN 2007		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Combined Test Operations Expanding Efficiencies and Effectiveness				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Jacobs Technology, Inc. 308 W. D Street P.O. Box 1935 Eglin AFB, FL. 32542				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES See also ADM202526. Military Operations Research Society Symposium (75th) Held in Annapolis, Maryland on June 12-14, 2007, The original document contains color images.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 15	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Combined Test Operations Expanding Efficiencies and Effectiveness



Mike "Pod" Oelrich
OFP CTF/Jacobs
Eglin AFB FL
DSN 872-0526



Combined Test Operations Overview



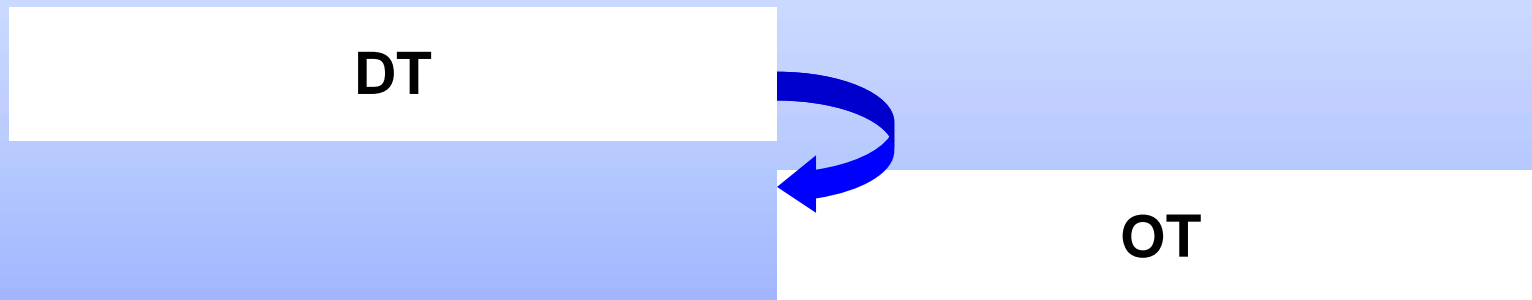
- Past vs. Future Test Strategy
- Combined Test Organization
- Planning Organizational Concept
- Execution Organizational Concept
- Combined Test Efficiencies
- Combined Test Effectiveness
- Combined Mission Types
- Major Issues
- Conclusion



Contrast of Traditional vs. Future Test Strategy



Traditional



Combined Test



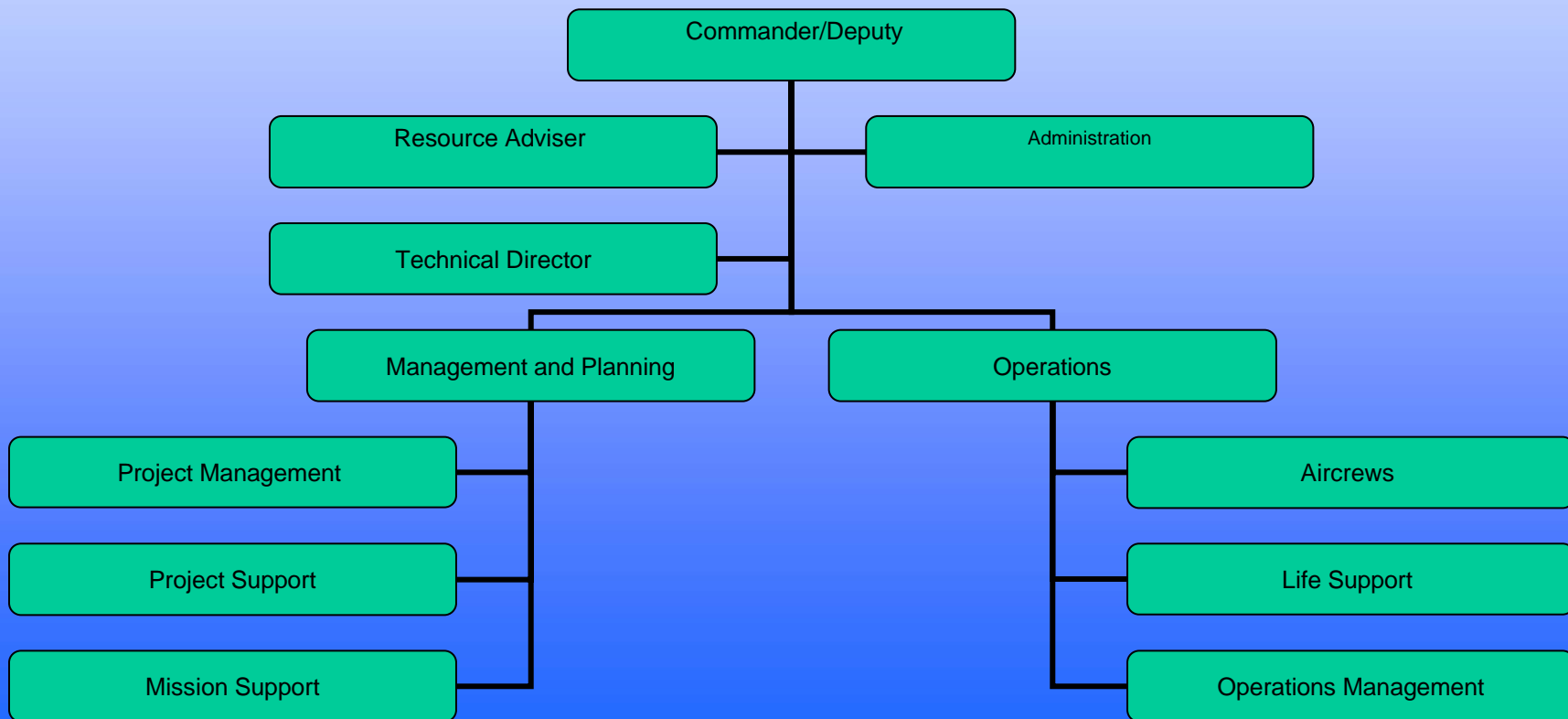
- Meets “Seamless Verification” Charter
- Efficient and Effective



Combined Planning and Execution Organization

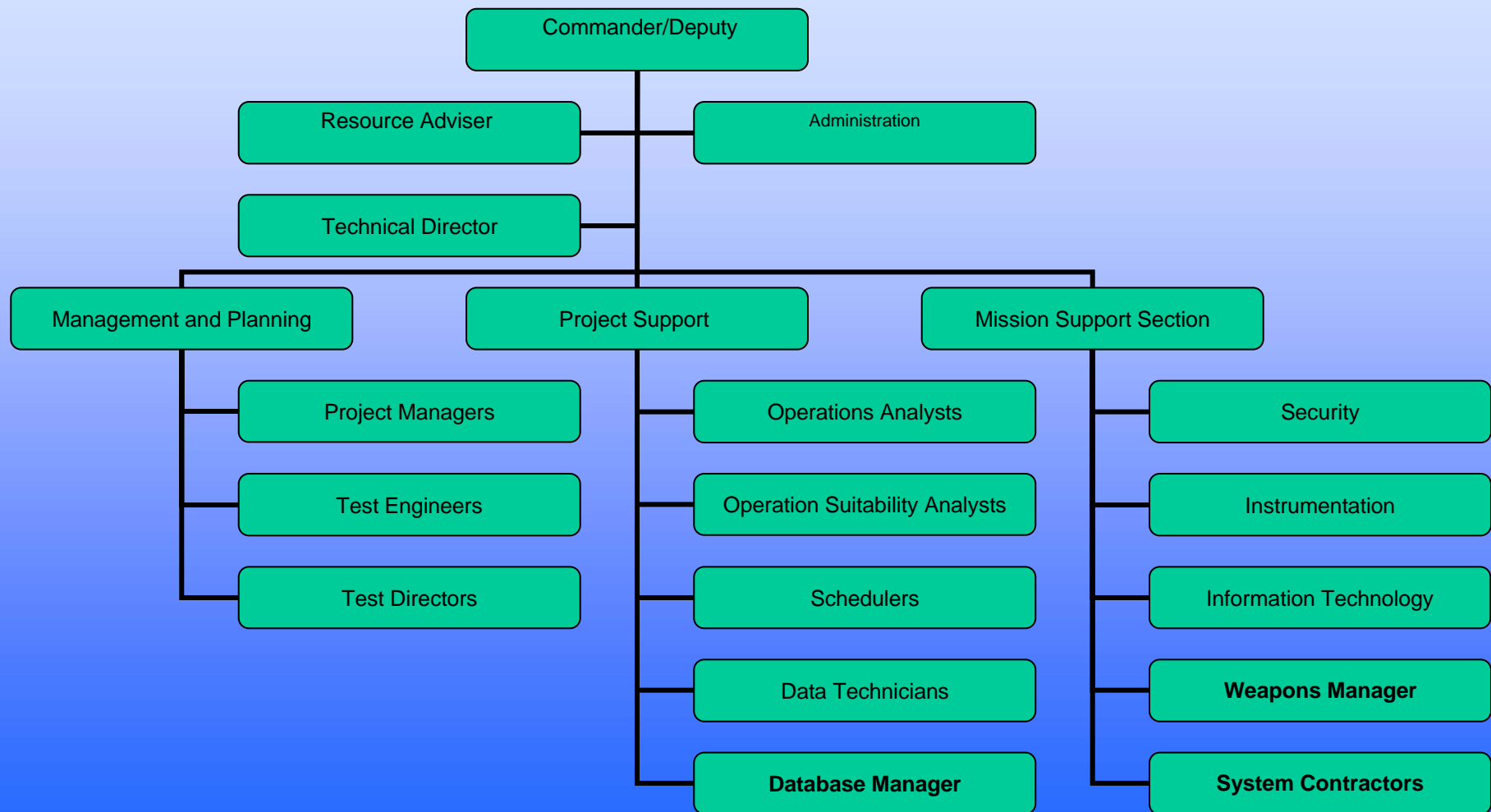


- **Mission** - Capability to simultaneously manage and execute aircraft Suite upgrade testing with 3-5 smaller scale/short duration test programs in either the planning, execution, or reporting stages.





Organizational Concept Planning and Management





Planning Cycle



- **Initial planning – 3 to 4 years out**
 - **Requirements set by ACC/A8 and AESG with system and aircraft contractors inputs**
 - **Hardware and software**
 - **Funding**
 - **Schedule**
 - **Modifications and Flight Test**
- **Near Term Planning – 2 years to start test**
 - **Test Organizations involved in planning**
 - **Contractor lab testing begins (one year)**
 - **Aircraft Modifications begins (6-9 months)**
 - **Administrative processes begin (4-6 months)**
 - **Flight test starts**



Combined Test Organization Execution Element



- **Mission:** Capability to support F-15C/F-15E Suite upgrade testing with a minimum of a 2 turn 2 for each MDS on a daily basis. Provide internal DT (SOF, Seek Eagle) and OT (FDE, OUE, LFE) capability with possessed aircrews and aircraft.
- **Execution Squadron Requirements:**
 - **Aircraft**
 - 6 F-15C/D
 - 6 F-15E
 - **Configuration**
 - Instrumentation- Similar for each MDS
 - Full A/A and A/G capability
 - **Manning/Qualifications** (9 aircrews per MDS- 1.5 manning rate)
 - 2 TPS qualified aircrews for each MDS
 - 2 FWIC graduate aircrews (minimum) for each MDS
 - All pilots 4 ship flight lead/Instructor qualified
 - All WSO's instructor qualified
 - All aircrews are full ACBT, LOWAT, and Special Weapons qualified
- **Training will focus on maintaining currencies and upgrades**



Notional Test Progression Example



- **A/G GP Regression**
 - **DT verification**
 - **DT specific points**
 - **OT clearance**
 - **Continued development (DT) and development support from OT assets**
 - **“Fly, Fix/Develop, Fly”**
 - **Majority of test missions and test points covered in this phase.**
 - **FDE- Evaluation of production item (hardware or software)**



Combined Test Efficiencies



- **“True” integration of limited DT and OT assets for combined testing efficiencies**
 - **Increases test planning and execution efficiencies**
 - **One PM- One Team**
 - **Specific runs from test matrix are tailored to mission**
 - **Both DT and OT points covered**
 - **Data will support both DT and OT objectives**
 - **Costs are reduced- assets are shared**
 - **Funds centrally managed from both OT/DT sources**
 - **Range costs reduced**
 - **Sorties reduced- missions designed to maximize test points**



Combined Test Effectiveness



- Exploit advantages of combined test management and execution team at a single location.
 - Increases test effectiveness
 - Improved communication and education
 - DT engineers have immediate access to people who set operational requirements
- Form test teams that exploits diverse skills and perspectives of DT and OT personnel
 - DT phases of test can integrate operational priorities and concerns
 - OT phase of test can use DT expertise for more robust test design, data analysis, and fault isolation
 - OT actively involved in development before FDE
 - Identify and correct key performance issues early in test



Mission Types



- **Hard Requirements**
 - **Safety of Flight/Seek Eagle will be flown by TPS crews**
 - **DT/DT Support flown by all aircrews – test points are operationally representative to the maximum extent**
 - **Tactics/LFE missions flown by trained and current aircrews**
- **Combined DT/OT will support specific mission types**
 - **A/G and A/A regression**
 - **New Features**
 - **Side-by-side comparisons – LANTIRN vs. SNIPER**
 - **Can differentiate between A/C and OFP problems**
 - **75% to 80% of all missions can be flown combined**



Major Issues



- **MAJCOM - Centralized Management is required**
 - **ACC or AFMC**
 - **Management/ Execution- practical and philosophical differences must be addressed**
 - **Funding – from one or multiple sources/programs**
 - **Personnel - Mix of both commands**
 - **Organization – by MDS (F-15, F-16, etc.)**
 - **Separate management and execution arms**
 - **Combined – all functions in one organization**
 - **Maintenance – internal or external**
 - **Munitions- one account (test and training)**
 - **Currencies/Training– must be factored into schedule**



Why it Matters – Bottom Line



Past

DT



OT

Proposed

DT



DT/DT Support



FDE

- **Smart testing is our goal!**



CONCLUSION



Questions and Comments